

CONVAIR  
A Division of General Dynamics Corporation  
(San Diego)

DESIGN INFORMATION BULLETIN

NO.: 25.006

CONVAIR REPORT NO. ZM-22-005

PAGE: 1 of 2

MODEL 22 AIRPLANE

ATTACHMENT OF ELECTRICAL HARNESS OR  
HYDRAULIC TUBING INSTALLATIONS TO  
AIRPLANE STRUCTURE

DATE: 3-28-58

I. General Requirements.

A. Hole sizes for bolts or screws.

- 1. #10 - - - - -  $\frac{.192}{.191}$
- 2. #8 - - - - -  $\frac{.176}{.169}$

B. Minimum edge distance two (2) dia.

C. Minimum spacing of .75" or 4 times dia. of larger hole, whichever is greater, to existing rivets, bolts, screws or holes.

D. No installation shall tend to roll flange of structural member.

E. Installations shall be made with rivets whenever possible.

F. Rivets shall not be less than 1/8" dia. or greater than 3/16" dia.

G. No installation shall be made using sheet metal screws thru airplane structure.

H. Spacers are to be used only when absolutely necessary and limited to 3/8" length when installed on airplane structure. Sheet metal clips riveted to frame webs are preferred to spacers attached to frame flanges.

I. No holes are to be tapped in airplane structure.

J. Bolts or screws requiring an unthreaded shank shall be installed to have the unthreaded portion thru the airplane structure.

II. Items requiring Structures Group approval.

A. Holes drilled in fittings, forgings, castings, or weldments.

B. Holes greater than .20" dia.

C. Clips, brackets, clamps, or spacers installed on unsupported webs.

D. Removal or replacement of existing attachments.

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III. Airplane structure may be used for the support of harness and tubing installations without specific structures group approval, except for Item II above, and the following exceptions:

A. Fuselage.

1. Nose structure forward of Sta 273. (Floor structure and installations for supporting equipment, controls, etc., in this area may be used for harness and tubing supports without approval.)
2. Main entrance and service door frames and longerons at Stations 324, 362, 1263, and 1302.
3. Wing spar attachment frames at Stations 640, 832, and 926.
4. Fin and stabilizer attachment frames at Stations 1325, 1374, 1412, and 1526.
5. All flat pressure panel webs and stiffeners (such as bulkhead Sta 926, wing center section, front spar, nose wheel box, aft pressure bulkhead Sta 1373 and wheel well roof.)
6. Inner flanges of stringers within 4" of either side of stringer.

B. Wing.

1. Honeycomb panels.
2. Main wing box overhanging skin (upper or lower) or the member along trailing edge of upper overhanging skin.

C. Empennage.

1. Honeycomb panels.

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